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EXAMINER	
JANKUS, ALMIS R	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/806,980	CHEUNG ET AL.
	Examiner	Art Unit
	Almis R Jankus	2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-26* is/are rejected.

7)☒ Claim(s) *14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-26 are presented for examination.

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Claims 1-13, 15-21, and 24 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-2, 6-20, 57 and 62 of prior U.S. Patent No. 6,765,570. This is a double patenting rejection.

Listed below, in table format for easier comprehension, are application claims in the left column; corresponding claims from U.S. Patent 6,765,570 in the right column; followed by rationale to show equivalence.

Application 10/806,980	U.S. Pat. 6,765,570
1. A program storage device readable by a machine, the device tangibly embodying a program of instructions executable by the machine to perform method steps of imaging a three-dimensional (3D) volume, the method steps comprising:	1. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps of imaging a three-dimensional (3D) volume, *wherein the 3D volume is defined by a data set of voxels, each voxel expressed in the form of (x, y, z, datavalue)*, the method steps comprising:
creating one or more three-dimensional (3D) sampling probe(s), wherein each 3D sampling probe is a sub-volume of the 3D volume;	creating one or more three-dimensional (3D) sampling probe(s), wherein each 3D sampling probe is a sub-volume of the 3D volume;
drawing an image of the 3D sampling probe(s), the image comprising an intersection of the 3D sampling	drawing *at least a portion of* an image of the 3D sampling probe(s) *for display to a user*, the image comprising *voxels*

probe(s) and the 3D volume;	*at* an intersection of the 3D sampling probe(s) and the 3D volume;
and repeating the drawing step responsive to movement of the 3D sampling probe(s) within the 3D volume so that as the 3D sampling probe(s) moves through the 3D volume,	and repeating drawing step responsive to *input from the user as the user* moves a location of the 3D sampling probe(s) within the 3D volume so that as the 3D sampling probe(s) moves through the 3D volume,
the image of the 3D sampling probe(s) is redrawn substantially at the same time.	the image of the 3D sampling probe(s) is re-drawn *sufficiently fast to be perceived as real-time by the user, thereby enabling the user to concurrently visualize a user selected feature defined by the datavalues as the user moves the 3D sampling probe(s) and step is repeated.*

With respect to claim 1, as can be seen from the above table, the preamble of the patent claim differs from the preamble of the application claim by the added recitation of "wherein the 3D volume is defined by a data set of voxels, each voxel expressed in the form of (x, y, z, datavalue)"; however, the application claim requires (3D) sampling probe(s), wherein each 3D sampling probe is a sub-volume of the 3D

volume. At page 21 paragraph [0065], the specification describes sampling probes as "A probe corresponds to a sub-volume of a larger 3D volume. Particularly, a probe defines a sub-set that is less than the complete data set of voxels for a 3D volume data set" and at page 13 paragraph [0043] "3D volume data sets comprise "voxels" or volume elements. Each voxel is a sample or point within a volume" and at page 5 paragraph [0010] "each voxel expressed in the form of (x, y, z, datavalue)". Given that the specification describes the elements: (3D) sampling probe, sub-volume, and 3D volume, only in terms of voxels, the recitation in the application claim preamble is equivalent to the patent claim preamble.

In the drawing step, the application claim recites "an image", and the patent claim recites "*at least a portion of* an image". Since a portion of an image is still an image the two different phrases are equivalent in terms of claim scope. Also in the drawing step, the application claim recites "drawing" and the patent claim recites "drawing ... for display to a user"; however, the specification describes drawing and displaying only in the context of presentation to a user. For example, at pages 5-6 paragraph [1101] "drawing an image of the 3D sampling probe(s) for display to a user" and at page11 paragraph [0022] "It is a further advantage of the present invention that a user can interactively change the displayed image in a continuous manner, without interruption or perceptible delay or lag. This allows a user to more quickly and accurately interpret and identify features inherent in 3D volume data sets". Thus, the drawing step in the application claim and the patent claim is equivalent.

In the repeating drawing step, the application claim does not recite "responsive to

input from the user as the user moves a location of the 3D sampling probe" as is recited in the patent claim. The application claim recites "responsive to movement of the 3D sampling probe". Since the specification describes no responsiveness to movement other than responsive to input from a user as the user moves a location", these two features are equivalent.

Finally, the application claim and the patent claim require the image of the 3D sampling probe(s) to be re-drawn "substantially at the same time" and "sufficiently fast to be perceived as real-time by the user, thereby enabling the user to concurrently visualize a user selected feature defined by the datavalues as the user moves the 3D sampling probe(s)" respectively. The specification makes no mention of "substantially at the same time". Further if the image is redrawn "substantially at the same time" it is not entirely clear what event is temporally concurrent with the redrawing. The only reasonable interpretation is that the image is redrawn substantially at the same time as the sampling probe is moved. Since the disclosure of movement, in the specification, is always associated with input from a user, drawing is always associated with providing perception to a user, and concurrency is always described as sufficiently fast to be perceived as real-time by the user, the redrawing steps are equivalent.

Therefore, the application claim and the patent claim are equivalent with respect to their respective individual steps, and as a whole; and have identical claim scopes.

2. The program storage device of claim	2. The program storage device of claim

1, wherein the method steps further comprise:	1, wherein the method steps further comprise:
repeating the drawing step to reshape the 3D sampling probe(s) so that as the 3D sampling probe(s) is changed in shape,	repeating drawing step *responsive to input from the user* to re-shape the 3D sampling probe(s) so that as the 3D sampling probe(s) is changed in shape,
the image of the 3D sampling probe(s) is redrawn substantially at the same time.	the image of the 3D sampling probe(s) is re-drawn *sufficiently fast to be perceived as real-time by the user.*

With respect to claim 2, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 2 and patent claim 2.

3. The program storage device of claim 1, wherein the image of the 3D sampling probe(s) is redrawn at a frame rate of at least about 10 to 15 frames per second.	8. The program storage device of claim 1, wherein repeating step is carried out so that the image of the 3D sampling probe(s) is re-drawn at a frame rate of at least. about 10 to 15 frames per second.

Application claim 3 is identical to patent claim 8 except for minor differences.

4. The program storage device of claim 1, wherein the drawing step comprises:	9. The program storage device of claim 1, wherein drawing step comprises:
extracting from the 3D volume a sub-volume data set corresponding to the surfaces of the 3D sampling probe(s);	extracting from the 3D volume a sub-volume data set corresponding to the surfaces of the 3D sampling probe(s);
and texture mapping the sub-volume data set onto the surfaces of the 3D sampling probe(s).	and texture mapping the sub-volume data set onto the surfaces of the 3D sampling probe(s).

Application claim 4 is identical to patent claim 9.

5. The program storage device of claim 1, wherein the method steps further comprise:	11. The program storage device of claim 1, wherein the method steps further comprise:
repeating the drawing step to rotate a 3D orientation of the 3D volume and the 3D sampling probe(s) so that as the 3D orientation is changed, the image of the 3D sampling probe(s) is redrawn	repeating drawing step *responsive to input from the user* to rotate a 3D orientation of the 3D volume and the 3D sampling probe(s), so that as the 3D orientation is changed, the image of

substantially at the same time.	the 3D sampling probe(s) is re-drawn *sufficiently fast to be perceived as real-time by the user.*

With respect to claim 5, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 5 and patent claim 11.

6. The program storage device of claim 1, wherein the method steps further comprise:	12. The program storage device of claim 1, wherein the method steps further comprise:
repeating the drawing step to rotate a 3D orientation of the 3D sampling probe(s) independently of a 3D orientation of the 3D volume so that as the 3D orientation of the 3D sampling probe(s) is changed,	repeating drawing step *responsive to input from the user* to rotate a 3D orientation of the 3D sampling probe(s) independently of a 3D orientation of the 3D volume so that as the 3D orientation of the 3D sampling probe(s) is changed,
the image of the 3D sampling probe(s) is redrawn substantially at the same time.	the image of the 3D sampling probe(s) is re-drawn *sufficiently fast to be perceived as real-time by the user.*

With respect to claim 6, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 6 and patent claim 12.

7. The program storage device of claim 2, wherein the method steps further comprise:	6. The program storage device of claim 2, wherein the method steps further comprise:
repeating the drawing step to rotate a 3D orientation of the 3D volume and the 3D sampling probe(s) so that as the 3D orientation is changed,	repeating drawing step *responsive to input from the user* to rotate a 3D orientation of the 3D volume and the 3D sampling probe(s), so that as the 3D orientation is changed,
the image of the 3D sampling probe(s) is redrawn substantially at the same time.	the image of the 3D sampling probe(s) is re-drawn *sufficiently fast to be perceived as real-time by the user.*

With respect to claim 7, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 7 and patent claim 6.

8. The program storage device of claim	7. The program storage device of claim

2, wherein the method steps further comprise:	2, wherein the method steps further comprise:
repeating the drawing step to rotate a 3D orientation of the 3D sampling probe(s) independently of a 3D orientation of the 3D volume so that as the 3D orientation of the 3D sampling probe(s) is changed,	repeating drawing step *responsive to input from the user* to rotate a 3D orientation of the 3D sampling probe(s) independently of a 3D orientation of the 3D volume so that as the 3D orientation of the 3D sampling probe(s) is changed,
the image of the 3D sampling probe(s) is redrawn substantially at the same time.	the image of the 3D sampling probe(s) is re-drawn *sufficiently fast to be perceived as real-time by the user.*

With respect to claim 8, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 8 and patent claim 7.

9. The program storage device of claim 1, wherein the drawing step comprises:	13. The program storage device of claim 1, wherein drawing step comprises:
drawing an image of an intersection of	drawing an image of an intersection of

one of the 3D sampling probes with another one of the 3D sampling probes.	one of the 3D sampling probes with another of the 3D sampling probes.

Application claim 9 is identical to patent claim 13.

10. The program storage device of claim 9, wherein the one of the 3D sampling probe(s) is a data probe and the another one of the 3D sampling probe(s) is a substantially transparent cut probe that cuts out a 3D sub-section of the data probe so that the image of the intersection of the data probe and the cut probe comprises an intersecting surface internal to the data probe.	14. The program storage device of claim 13, wherein the one of the 3D sampling probe(s) is a data probe and the another of the 3D sampling probe(s) is a *completely* transparent cut probe that cuts out a 3D sub-section of the data probe so that the image of the intersection of the data probe and the cut probe comprises an intersecting surface internal to the data probe.

Application claim 10 is identical to patent claim 14 except for minor differences.

11. The program storage device of claim 10, wherein the drawing step comprises:	15. The program storage device of claim 14, wherein drawing step comprises
drawing an image of a third 3D sampling probe, wherein the third 3D sampling probe is volume rendered at least partially within the 3D sub-section of the data probe.	drawing an image of *the intersection of the data probe, the cut probe, and* a third 3D sampling probe, wherein the third 3D sampling probe is volume rendered at least partially within the 3D sub-section of the data probe.

Application claim 11 does not recite the intersection of the data probe, however, this is a requirement with rendering within the 3D sub-section of the data probe.

12. The program storage device of claim 1, wherein the drawing step comprises:	20. The program storage device of claim 1, wherein drawing step comprises:
dividing the image of the 3D sampling probe(s) into a plurality of over-lapping sub-images; and simultaneously drawing the plurality of over-lapping sub-images,	dividing the image of the 3D sampling probe(s) into a plurality of over-lapping sub-images; and simultaneously drawing the plurality of over-lapping sub-images,
thereby increasing a field-of-view to the	thereby increasing a field-of-view to the

user.	user.

Application claim 12 is identical to patent claim 20.

13. The program storage device of claim 1, wherein the 3D volume is defined by a data set of voxels, each voxel expressed in the form of x, y, z, data value.	**FROM THE PREAMBLE OF CLAIM 1** *wherein the 3D volume is defined by a data set of voxels, each voxel expressed in the form of (x, y, z, datavalue)*

With respect to claim 13, the rationale regarding voxels, presented at the rejection of claim 1, shows that the recitation of claim 13 is inherent in claim 1.

15. The program storage device of claim 13, wherein the drawing step comprises:	10. The program storage device of claim 1, wherein drawing step comprises:
extracting from the 3D volume a sub-volume data set corresponding to the 3D sampling probe(s);	extracting from the 3D volume a sub-volume data set corresponding to the 3D sampling probe(s);

and volume rendering the sub-volume data set in accordance with a transparency setting that is a function of each data value,	and volume-rendering the sub-volume data set in accordance with a transparency setting that is a function of datavalue,
thereby volume imaging the 3D sampling probe(s).	thereby volume imaging the 3D sampling probe(s).

Application claim 15 is identical to patent claim 10.

16. The program storage device of claim 13, wherein the method steps further comprise:	16. The program storage device of claim 1, wherein the method steps further comprise:
identifying a seed point,	identifying a seed point,
wherein the seed point is a voxel within the data set of voxels that defines one of the 3D sampling probe(s);	wherein the seed point is within the data set of voxels that defines one of the 3D sampling probe(s);
and defining a selection criteria based on the data values,	and defining a selection criteria based on datavalues,
the drawing step being carried out to image selected points only within the 3D sampling probe,	drawing step being carried out to image selected points only within the 3D sampling probe,

wherein the selected points are connected to the seed point,	wherein the selected points are connected to the seed point,
and the data values of the selected points satisfy the selection criteria.	and the datavalues of the selected points satisfy the selection criteria.

Application claim 16 is identical to patent claim 16.

17. The program storage device of claim 16,	17. The program storage device of claim 16,
wherein the 3D sampling probe containing the seed point is an auto picking 3D sampling probe,	wherein the *seed point is within a data set of voxels that defines* an auto picking 3D sampling probe,
wherein the repeating step is carried out so that as the auto picking 3D sampling probe moves through the 3D volume,	wherein repeating step is carried out so that as the auto picking 3D sampling probe moves through the 3D volume,
the image of the selected points is redrawn within at least one of the auto picking 3D sampling probe and the 3D volume	the image of the selected points is displayed within at least one of the auto picking 3D sampling probe and the 3D volume,
substantially at the same time.	*the image being re-drawn sufficiently*

	fast to be perceived as real-time by the user.

With respect to claim 17, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 17 and patent claim 17.

18. The program storage device of claim 17,	18. The program storage device of claim 17,
wherein the repeating step is carried out so that as the auto picking 3D sampling probe moves through the 3D volume,	wherein repeating step is carried out so that as the auto picking 3D sampling probe moves through the 3D volume,
the image of the selected points is redrawn only within the auto picking 3D sampling probe	the image of the selected points is *displayed* only within the auto picking 3D sampling probe,
substantially at the same time.	*the image being re-drawn sufficiently fast to be perceived as real-time by the user.*

With respect to claim 18, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 18 and patent claim 18.

19. The program storage device of claim 17, wherein the method steps further comprise:	19. The program storage device of claim 17, wherein the method steps further comprise:
defining an eraser 3D sampling probe;	defining an eraser 3D sampling probe;
and defining a de-selection criteria based on data values,	and defining a de-selection criteria based on datavalues,
wherein the repeating step is carried out so that as the eraser 3D sampling probe moves through the selected points that satisfy the de-selection criteria,	wherein repeating step is carried out so that as the eraser 3D sampling probe moves through the selected points that satisfy the de-selection criteria,
the selected points that satisfy the de-selection criteria are deleted from the image	the selected points that satisfy the de-selection criteria are deleted from the image,
substantially at the same time.	*the image being re-drawn sufficiently fast to be perceived as real-time by the user.*

With respect to claim 19, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 19 and patent claim 19.

20. The program storage device of claim 1, wherein	*FROM CLAIM 1 – "thereby enabling" – (just a repetition)*
the image of the 3D sampling probe(s) is redrawn substantially at the same time as the 3D sampling probe(s) moves through the 3D volume so that a user-selected feature defined by the data values is at least partially visualized.	*the image of the 3D sampling probe(s) is re-drawn sufficiently fast to be perceived as real-time by the user, thereby enabling the user to concurrently visualize a user selected feature defined by the datavalues as the user moves the 3D sampling probe(s)*

With respect to claim 20, the rationale regarding redrawing and moving concurrency, presented at the rejection of claim 1, shows that the recitation of claim 20 is inherent in claim 1.

21. A program storage device readable by a machine, the device tangibly embodying a program of instructions executable by the machine to perform method steps of imaging a three-	57. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps of imaging a three-dimensional (3D)

dimensional (3D) volume, the method steps comprising:	volume, *wherein the 3D volume is defined by a data set of voxels, each voxel expressed in the form of (x, y, z, datavalue)*, the method steps comprising:
creating a three-dimensional (3D) sampling probe,	creating *one or more* three-dimensional (3D) sampling probe(s),
wherein the 3D sampling probe is a sub-volume of the 3D volume;	wherein each 3D sampling probe is a sub-volume of the 3D volume;
drawing an image of at least one of the 3D sampling probe and the 3D volume, the image comprising an intersection of the 3D sampling probe and the 3D volume;	drawing an image of the 3D sampling probe(s) *for display to a user*, the image comprising an intersection of the 3D sampling probe(s) and the 3D volume;
and repeating the drawing step responsive to movement of the 3D sampling probe within the 3D volume so that as the 3D sampling probe moves through the 3D volume, the image of the 3D sampling probe is redrawn	and repeating drawing step responsive to *input from the user to* move *a location* of the 3D sampling probe(s) within the 3D volume so that as the 3D sampling probe(s) moves through the 3D volume, the image of the 3D sampling probe(s) is re-drawn
substantially at the same time.	*sufficiently fast to be perceived as real-*

	time by the user, thereby enabling the user to visualize a feature defined by the datavalues.

With respect to claim 21, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 21 and patent claim 57.

24. A method for imaging a three-dimensional (3D) data volume, the method comprising the steps of:	62. A method for imaging a three-dimensional (3D) data volume *representing a geographic space for visualization and interpretation of physical parameters of the geographic space by a user, wherein the 3D data volume is defined by a data set of voxels, each voxel expressed in the form of (s, y, z, datavalue)*, the method comprising:
creating a three-dimensional (3D) sampling probe wherein the 3D sampling probe is a sub-volume of the 3D volume;	creating one or more three-dimensional (3D) sampling probe(s), wherein each 3D sampling probe is a sub-volume of the 3D data volume;

drawing an image of at least one of the 3D sampling probe and the 3D volume, the image comprising an intersection of the 3D sampling probe and the 3D volume;	drawing an image of the 3D sampling probe(s) *for display to a user*, the image comprising an intersection of the 3D sampling probe(s) and the 3D data volume;
and repeating the drawing step responsive to movement of the 3D sampling probe within the 3D volume so that as the 3D sampling probe moves through the 3D volume, the image of the 3D sampling probe is redrawn	and repeating drawing step responsive to *input from the user to* move *a location* of the 3D sampling probe(s) within the 3D data volume so that as the 3D sampling probe(s) moves through the 3D data volume, the image of the 3D sampling probe(s) is re-drawn
substantially at the same time.	*sufficiently fast to be perceived as real-time by the user, thereby enabling the user to visualize and interpret physical parameters in the geographic space.*

With respect to claim 24, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 24 and patent claim 62. The preamble of claim 62 additionally recites “representing a geographic space for visualization and interpretation of physical parameters of the

geographic space by a user" is given no patentable weight as merely a field of use limitation.

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims and 22-26 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 45 and 62 of U.S. Patent No. 6,765,570. Although the conflicting claims are not identical, they are not patentably distinct from each other because they recite different wording and phrasing to describe the same features.

Application 10/806,980	U.S. Pat. 6,765,570
22. The program storage device of claim 21, wherein the 3D sampling probe is a data probe and the 3D volume is substantially transparent.	45. The computer program logic of claim 44, wherein the one of the 3D sampling probe(s) is a data probe and the another of the 3D sampling probe(s) is a completely transparent cut probe that cuts out a 3D sub-section of the data probe so that the image of the intersection of the data probe and the cut probe comprises an intersecting surface internal to the data probe.

23. The program storage device of claim 21, wherein the 3D sampling probe is a substantially transparent cut	45. The computer program logic of claim 44, wherein the one of the 3D sampling probe(s) is a data probe and

probe and the 3D volume comprises a visible data set of voxels, each voxel expressed in the form of x, y, z, data value.	the another of the 3D sampling probe(s) is a completely transparent cut probe that cuts out a 3D sub-section of the data probe so that the image of the intersection of the data probe and the cut probe comprises an intersecting surface internal to the data probe.

Claims 22-23 recite essentially the same subject matter as patent claim 45; however, using different phraseology.

24. A method for imaging a three-dimensional (3D) data volume, the method comprising the steps of:	62. A method for imaging a three-dimensional (3D) data volume *representing a geographic space for visualization and interpretation of physical parameters of the geographic space by a user, wherein the 3D data volume is defined by a data set of voxels, each voxel expressed in the form of (s, y, z, datavalue)*, the method comprising:

creating a three-dimensional (3D) sampling probe wherein the 3D sampling probe is a sub-volume of the 3D volume;	creating one or more three-dimensional (3D) sampling probe(s), wherein each 3D sampling probe is a sub-volume of the 3D data volume;
drawing an image of at least one of the 3D sampling probe and the 3D volume, the image comprising an intersection of the 3D sampling probe and the 3D volume;	drawing an image of the 3D sampling probe(s) *for display to a user*, the image comprising an intersection of the 3D sampling probe(s) and the 3D data volume;
and repeating the drawing step responsive to movement of the 3D sampling probe within the 3D volume so that as the 3D sampling probe moves through the 3D volume, the image of the 3D sampling probe is redrawn	and repeating drawing step responsive to *input from the user to* move *a location* of the 3D sampling probe(s) within the 3D data volume so that as the 3D sampling probe(s) moves through the 3D data volume, the image of the 3D sampling probe(s) is re-drawn
substantially at the same time.	*sufficiently fast to be perceived as real-time by the user, thereby enabling the user to visualize and interpret physical parameters in the geographic space.*

With respect to claim 24, the rationale regarding the differences in wording, presented at the rejection of claim 1, also apply to the differences between application claim 24 and patent claim 62. The preamble of claim 62 additionally recites "representing a geographic space for visualization and interpretation of physical parameters of the geographic space by a user" is given no patentable weight as merely a field of use limitation. Even if the preamble of patent claim 62 has patentable weight, application claim 24 is an obvious variation because geographic space is characterized by volume (width, breadth, height) corresponding to the mathematical values (x, y, z) required for computation by a computer.

25. The method of claim 24, wherein the 3D sampling probe is a data probe and the 3D volume is substantially transparent.	45. The computer program logic of claim 44, wherein the one of the 3D sampling probe(s) is a data probe and the another of the 3D sampling probe(s) is a completely transparent cut probe that cuts out a 3D sub-section of the data probe so that the image of the intersection of the data probe and the cut probe comprises an intersecting surface internal to the data probe.

26. The method of claim 24, wherein the 3D sampling probe is a substantially transparent cut probe and the 3D volume comprises a visible data set of voxels, each voxel expressed in the form of x, y, z, data value.	45. The computer program logic of claim 44, wherein the one of the 3D sampling probe(s) is a data probe and the another of the 3D sampling probe(s) is a completely transparent cut probe that cuts out a 3D sub-section of the data probe so that the image of the intersection of the data probe and the cut probe comprises an intersecting surface internal to the data probe.

Claims 22-23 recite essentially the same subject matter as patent claim 45; however, using different phraseology.

6. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almis R Jankus whose telephone number is 703-305-9795. The examiner can normally be reached on M-F, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 703-305-9798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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AJ

ALMIS R. JANKUS
PRIMARY EXAMINER